

“[i]ncorporation of the Census Block data into the dynamic design process of the BCPM is scheduled for a future phase release of the model.”²⁹ The RTC continues to believe that the fine unit of geography used by the original CPM provides a better method by which to reduce the cost variation between customers in any particular area so that opportunities for cream-skimming are minimized.³⁰ The RTC cannot yet comment on the effort by the sponsors of the BCPM but encourages the Commission staff to continue to work with the sponsors regarding this matter.

C. SHARED INFRASTRUCTURE

In its analysis of demand specification, the staff explains its ongoing study to determine how second residential lines and business lines, as well as broadband loops, should be incorporated into any model used to estimate the forward-looking cost of network elements and supported services. The staff also claims the following:

these different types of lines may be provided using shared equipment, and the exclusion of any lines may lead to an overestimation of per-line costs when economies and scale and scope are present in the delivery of telecommunications services.³¹

The RTC is aware that the Hatfield 2.2.2 assumes that all structure costs (*i.e.*, poles, conduit, trenching, plowing) will be shared with two other providers (presumably the electric utility and the cable television company), and therefore only one-third of the

²⁹ Comments of Pacific Bell, US WEST, and Sprint at 2, January 7, 1997.

³⁰ The RTC explained in its comments that disaggregation into smaller geographic areas or density zones should help discourage cream skimming that could impair rural rates and network development. Reply Comments of the RTC at 19, CC Docket No. 96-98, May 30, 1996.

³¹ Staff Analysis at para. 28.

cost of all structures should be charged to telephone service. Conversely, the BCM2 model assumes that 100 percent of the structure costs will be assigned to telephony, and the BCPM proponents indicate that this successor to the BCM2 will assign portions of the structure costs to other utilities with percentages varying by structure type and by density zone. The percentages proposed would assign substantially more than the 33 percent proposed the by Hatfield sponsors.³²

In its analysis, the staff asserts its view that the default assumptions of the BCM2 and the Hatfield 2.2.2 "are both simplistic, and that further investigation is needed by model sponsors on the sharing fraction that is most appropriate for the estimation of forward-looking costs."³³ In that regard, the RTC refers the staff to its previous comment that for rural areas, the Hatfield model assumptions regarding structure costs are unrealistic whether analyzed on a historical or forward-looking basis.

While many rural towns have cable television providers, many still do not. More importantly, cable television generally stops at the edge of town while telephony service extends far out into the rural areas outside of town. In most areas outside the immediate town, there is no cable television provider with which to share costs. Also, in many rural areas electric companies and telephony use different construction methods for providing facilities, differences which lead to a scenario in which there is no sharing of structure costs. Typically, particularly in large parts of the Midwest and West, telephony networks are provided using buried plant, with much of it plowed into the ground at relatively shallow depths. This is standard construction not only in rural areas, but in the towns as well. In these same areas, electric service is typically and primarily provided via aerial plant. While telephony service in some rural areas is provided on an aerial basis

³² The assumption made regarding the sharing of structures is identified by Christensen Associates as one of the major differences between the Hatfield 2.2.2 and the BCM2. *See Economic Evaluation of Proxy Cost Models for Determining Universal Service Support*, Christensen Associates, January 9, 1997.

³³ Staff Analysis at para. 46.

(primarily inside towns) and there exists some structure sharing of poles, it is more likely that the plant is built differently with no structure sharing. The Hatfield assumption of three providers always sharing structure costs is completely unrealistic for rural areas.³⁴

Several proxy workshop panelists provided testimony concerning this issue.³⁵ The RTC urges the staff to consider the comments provided during the workshops regarding the assumption of infrastructure sharing both in conjunction with its analysis of the specification of the total demand for telecommunications services.

D. SPECIFICATION OF NETWORK ELEMENTS

The Staff Analysis provides the following general conclusion regarding the proper specification of network elements: "we believe that models should be updated or modified as the range of services, and network elements used to deliver these services, evolves over time." The RTC agrees that if the Commission mandates the use of the cost models for any policy purpose, the models must be updated over time.

However, the RTC is concerned that the staff includes no discussion of how this might be accomplished. Indeed, the information requested of the model sponsors for the purpose of the January 14-15 proxy workshop discussions included no request for specific details regarding scheduled updates. The RTC asked, "do the model's proponents have a plan for continued update and/or revision to the model inputs or to the

³⁴ Comments of the RTC and GVNW-Management, Inc. at 19, January 24, 1997.

³⁵ For example, panelist Peter Martin (BellSouth) emphasized the fact that the Hatfield model provides for 35 foot poles while at the same time assumes that two-thirds of the carrier's infrastructure is shared. "Hatfield uses 35 foot poles. That would provide insufficient clearance over roads when you're sharing between telephone and electric cables ..." Peter Martin, BellSouth, Panel 1, Questions 4, January 14, 1997.

model itself?"³⁶ The RTC believes that there must be some plan for these desired updates of services and network elements before the Commission can properly implement a policy based on the mandated use of a proxy model.

The staff must also recognize that concern and confusion remains on how updates might affect a company's individual investment plans. How can a carrier properly plan for future investment if there is uncertainty about possible changes to the structure of the model? In other words, it would appear reasonable for RTC members to attempt to recoup all investment upfront, for fear that the Commission might adopt changes to the network elements of a model at some point in the future, and thus change the basis by which these carriers draw universal service support. The RTC asks the staff to consider how a plan for updates might be formalized, so as to eliminate uncertainty which may dramatically affect plans for future infrastructure investment.

The RTC would also like to respond to the staff's complaint that although commenters assert that the "models do not generate networks capable of delivering telecommunications services ... [these commenters] have generally provided neither a detailed analysis of the models' flaws nor put forth any alternative proposals that would improve the models." The RTC wishes to make it clear that the currently available Hatfield model *cannot yet be run for small, rural incumbents*. Lisa Hanselman (GVNW-Management, Inc.) testified during the proxy workshops that she is unable to test even the mechanics of the Hatfield 2.2.2, as the Hatfield model does not include data for census

³⁶ See RTC letter to John S. Morabito, Deputy Chief, Accounting and Audits Division. January 7, 1997.

block groups and study areas served by telephone companies other than the Bell Operating Companies.³⁷ It is impossible to provide the desired detailed analysis if the model cannot even be run for small, rural independents. For this reason, the RTC has asked the Commission not to rely on Hatfield model results for small telephone companies at this time for universal service support or any other purpose.³⁸

E. FILL FACTORS, COST OF CAPITAL AND DEPRECIATION EXPENSE

A substantial portion of the Staff Analysis is dedicated to the analysis of the following model components: loop plant/fill factors, cost of capital and depreciation rates. The RTC refers the staff to its comments on these issues as presented in the January 24 filing. We agree with the staff that in general, model sponsors have not adequately justified the default fill factors.³⁹ In fact, the RTC urged the Commission to test several assumptions, including fill factors, against actual engineering studies.⁴⁰

³⁷ Lisa Hanselman, Panel 1, Question 2, January 14, 1997. The RTC and GVNW-Management, Inc. pointed out that during the opening remarks of the January 14 workshop, descriptions of the changes to be made to the Hatfield Release 3 did not include discussion concerning the addition of independent company data to the model as one of the significant modifications. Only later during the workshop panels did representatives of the Hatfield model indicate that independent company data would be included in Release 3. Panelist Robert Mercer (Hatfield Associates) asserted that the Hatfield model "works perfectly fine for rural companies ... it's a database issue." Robert Mercer, Hatfield Associates, Inc., Panel 1, Question 2, January 14, 1997. See Comments of the RTC and GVNW-Management, Inc. at 16-17, January 24, 1997.

³⁸ Comments of the RTC and GVNW-Management, Inc. at 17, January 24, 1997.

³⁹ Staff Analysis at para. 43.

⁴⁰ During the proxy workshops, John Schrottenboer of Southwestern Bell Telephone Company also urged the Commission to test inputs and assumptions (e.g., fill factors) against actual engineering studies, "as they provide some basis for determining what's reasonable." (John Schrottenboer, Southwestern Bell Telephone Company, Panel 1,

The RTC also refers the staff to its comments regarding the cost of capital and depreciation expense assumptions. In short, the RTC and GVNW-Management, Inc. agreed with those proxy workshop panelists that demanded consistency in the assumptions of the models. If the model represents the costs of an efficient forward-looking competitive network, it must also assume forward-looking cost of capital and recovery of capital through depreciation expense.⁴¹ The staff appears to agree, for it states:

[w]e believe that depreciation schedules specified in a proxy model should be based on forward-looking costing principles and should reflect projected economic lives of investments rather than physical plant lives.⁴²

F. JOINT AND COMMON COSTS

The Staff Analysis also addresses the issue of joint and common costs. If proxy models are used to estimate forward-looking costs, they must incorporate a calculation for joint and common costs. The RTC has previously pointed out that the Joint Board failed to address the widely accepted view that the models do not accurately provide for recovery of joint and common costs in its *Recommended Decision* in the universal service proceeding.⁴³ However, the staff appears to recognize this in its analysis and emphasizes

Question 3, January 14, 1997). The RTC and GVNW believe the Commission should require validation of the models to begin at the physical facilities level. See Comments of the RTC and GVNW-Management, Inc. at 14, January 24, 1997.

⁴¹ Comments of the RTC and GVNW-Management, Inc. at 12, January 24, 1997.

⁴² Staff Analysis at para. 61. Given the rate of technology development in the telecommunications industry, this would appear to require short depreciation schedules.

⁴³ RTC Comments at 7, CC Docket 96-45, December 19, 1996.

the importance of adequate justification for the calculation of forward-looking joint and common costs.⁴⁴ The RTC agrees with the Commission staff that additional evidence is needed to justify treatment of these costs in the models.

G. MARKET SHARE

The RTC notes that the Commission staff includes no discussion of changes in market share. However, the issue of changing market share was a focus of testimony during the proxy model workshops. The RTC refers the staff to its January 24 comments on this issue, as we strongly support those panelist statements which identified the importance of market share as a key component and necessary input.⁴⁵ As the industry moves toward competition, model proponents must be able to account for multiple providers of service within a single study area. If the models are intended to recognize the costs of a new entrant to the market, it is doubtful that a new entrant would have 100 percent of the market.

IV. THE USE OF ECONOMETRIC METHODS

Recently, the issue of model validation has incorporated a discussion of econometric studies. During the January 15 proxy workshop, panelists were asked to discuss the relevance of an econometric study to the validation of any particular model input or result.⁴⁶ This question brought forth a wide variety of suggestions on the type of

⁴⁴ Staff Analysis at para. 72.

⁴⁵ Comments of the RTC and GVNW-Management, Inc. at 7, January 24, 1997. The RTC has also raised this point in earlier comments. *See*, for example, RTC letter to John S. Morabito, Deputy Chief, Accounting and Audits Division, January 7, 1997.

⁴⁶ FCC Question 2 for Panel 2 and Question 2 for Panel 4, January 14-15, 1997.

econometric analyses that might prove useful or detrimental to the process of selecting a proxy. The Staff Analysis also asks whether econometric studies provide any check on model results, or whether estimated expenses may be based on econometric methods by specifying non-capital-related expenses as a function of the amount of investment and the volumes of output.⁴⁷

While the RTC is encouraged by the recent discussion and agrees that econometric methods might be useful in an effort to validate these models, the RTC also cautions the staff that if it undertakes such an effort, more time is clearly needed for study than is allowed under current proceeding recommendations. In addition, the RTC reiterates its view that proper testing and evaluation of the models must involve actual engineering studies.⁴⁸ The RTC is not negating the usefulness of econometrics as a tool for validation, but we are rather expressing the view that facilities level validation is necessary, and that a sufficiently thorough analysis based on a combination of these two methods will require additional time.

V. ESTIMATING EXPENSE USING LOWEST OBSERVED COST

In addition to suggesting that the staff may use econometric methods to estimate expenses, the Staff Analysis discusses an alternative - using the "lowest observed cost."

A different approach to estimating expenses might be to make use of yardstick comparisons in which, for each category of expenses, explicit comparisons would be made of current year expenses (or an average of expenses over the past three years) among all companies of a given size or type. Assuming that the methods of accounting for expenses across companies were consistent with each other, the

⁴⁷ Staff Analysis at paras. 12 and 69.

⁴⁸ RTC Comments at iii-iv, August 9, 1996.

forward-looking cost for each expense category would then correspond to the lowest observed cost.⁴⁹

The RTC reminds the Commission staff that "lowest observed cost" means nothing if (a) services comparable to those in urban areas are not provided at rates that are just, reasonable, and affordable or (b) the differences among "companies of a given size or type" mean that the yardstick expense was not a valid predictor for companies of that size or type. Pursuant to the Act's mandate, forward-looking expense estimates will need to comport with (a) the mandate for "sufficient" universal service support to achieve the purposes of Section 254 and (b) the requirement that subscribers in rural areas "have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas."⁵⁰

⁴⁹ Staff Analysis at para. 68.

⁵⁰ 47 U.S.C. Section 254(b)(3).

VI. CONCLUSION

The RTC supports many statements in the Staff Analysis but continues to stress that the public must be able to provide comment on the latest versions of the models once they are available. The RTC urges the Commission staff to carefully consider testimony provided during the January 14-15 workshops and also refers the staff to its previous comments on the issues raised by the panelists. The RTC does not negate the usefulness of econometrics as a tool for validation or estimation of expense, but we urge the staff to incorporate actual engineering studies in its analysis.

Respectfully submitted,
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February 3, 1997

CERTIFICATE OF SERVICE

I, Rita H. Bolden, certify that a copy of the foregoing Comments of the Rural Telephone Coalition in CPD Docket No. 97-2, DA 97-56 was served on this 3rd day of February 1997, by first-class, U.S. Mail, postage prepaid, to the following persons on the attached list:



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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Models to Determine)	CC Docket No. 96-45
Cost of Providing Service)	

**Comments of the
Rural Utilities Service**

Introduction

The Rural Utilities Service (RUS) appreciates the opportunity to offer comment to the Commission on universal service and the proposed computer cost models.

RUS has 48 years of experience estimating the cost of rural telecommunications systems. The Agency mission of aggressively extending universal service by making secure loans has required RUS to develop accurate cost estimates and efficient design requirements. The comments that follow are based on this experience, and on RUS' knowledge of 900 LECs who now provide universal service to the most rural of areas.

RUS has obtained and run the BCPM, the BCM2, and the Hatfield 3 model. In these Comments, RUS offers general observations on models, and selected comments on the BCPM and Hatfield 3 models. Since these models have only been available for a few days of the comment period, RUS plans to continue running the models and will offer more specific comments in its Reply Comments.

The model sponsors deserve a great deal of credit for their intensive work and their attempts to be responsive to criticisms of the models. Our Comments focus on the most rural of areas, those with 25 or fewer subscribers per route mile. The Comments do not discuss the applicability of the models for densities above 25 subscribers per route mile.

1. A mechanism to ensure service quality and actual investment in infrastructure needs to be devised.

The Joint Board Recommendation, and the use of proxy models outlined, do not tie receipt of support to investment in infrastructure – they should. The Recommendation suggests a new universal service support (USS) mechanism that provides support based on a proxy cost model, irrespective of actual investment. Without incentive to invest, RUS is concerned that rural telecommunications infrastructure will not be maintained and replaced at the rate necessary to ensure high quality service. The presence of competition might help address this problem, but some rural areas may not attract effective competition, and where they do, competition may be targeted towards lower cost subscribers within those areas.

RUS believes that a relationship should be established between the amount of USS provided to an eligible telecommunications carrier (ETC) and actual investment in rural infrastructure in the area for which it receives support. This could be used by the states or the USS administrator also to ensure the quality and reliability of service the carrier provides.

The new mechanism should clearly prohibit using USS money received to serve high cost areas for low cost areas or unregulated businesses.

2. The national benchmark element to be used in determining support levels needs more study and perhaps adjustment.

USS payments are to be based on the model result and a national benchmark revenue level which will be dominated by urban revenue levels. RUS does not have comparative data on rural versus urban revenues, but we suspect that due to differences in income levels, value of the services provided and market potential there would be considerable difference.

Basic service subscription levels are consistent between urban and rural areas, but subscription to other services may not be. Income level discrepancies may restrict the subscription to vertical services in rural areas. Also, with fewer businesses and professionals per capita, rural areas have less market potential for subscription to vertical services. Carriers in high cost areas might be spurred by the national average revenues benchmark to introduce and market new services, but these services are not included in the core services, their infrastructure would not be considered in proxy cost models, and therefore they would not be supported. In rural areas, building unsupported plant to provide such services might cost more than the services would earn.

Using a national revenue benchmark to determine support level effectively places a rural carrier in the position of competing with urban and suburban carriers to reach a certain

revenue level. But urban and suburban carriers are not challenged by high cost and limited markets.

A second concern is that using a national revenue benchmark in the equation to determine support level requires that local differences in affordability be financed by the states, probably through intrastate USS mechanisms. The national USS might help to ensure affordability by supporting service in high cost areas, but where a state finds that the national average revenue (the main component of the national revenue benchmark) is too high, that state would have to support the difference. Unless all states create adequately funded intrastate mechanisms, local rate affordability may not be assured nationally. Some states, particularly predominately rural plains and western states, may not have adequate intrastate revenues to ensure affordability for their high cost areas through an intrastate universal service support mechanism.

The benchmark revenues for carriers should be adjusted for rural, regional, state or local differences. The states or the USS administrator could set appropriate revenue levels for each carrier for use in calculating USS. Alternatively, the Commission could move away from a revenue benchmark approach and use affordability (per month charge) or comparison of cost to serve.

3. The models should adjust to ensure quality service to all.

Today, rural residents receive a quality of service which differs from carrier to carrier. Some service meets the definition of "core services," some does not. The state of the rural infrastructure varies greatly. The model gives support irrespective of the state of the existing infrastructure. The reality is that rural infrastructure includes the good and the not so good. An effective model would ensure that the not so good is made good and the good is maintained and strengthened.

4. Support calculated on a per subscriber basis will not adjust for competition.

A telecommunications system is made up of fixed costs, such as switching common equipment and housing, and outside plant to cover a geographical area, as well as subscription-dependent costs, such as switch lines and outside plant incremental pairs. The models studied calculate cost on a per subscriber basis, assuming that a complete system is built and serves all of the subscribers in the study area. An ETC would receive support on this basis, and would lose support incrementally as it loses customers to a new entrant. If an ETC loses half of its subscribers, which may happen in rural areas which include small towns, it would lose half of its support, whereas its cost per subscriber might increase by a factor of 10 or more because the remaining subscribers would probably be the highest cost subscribers. This would threaten universal service availability in many rural areas. The models do not adjust for these fixed costs, and the resulting increase in support needed for the remaining rural residents.

Models need to recognize the common, unavoidable, costs of operating a complete telecommunication system and should adjust to ensure all are served with core services.

5. Current model inputs and assumptions don't work for the most rural of areas.

The BCPM and Hatfield 3 model are sophisticated computer programs using complex calculations based on many assumptions. They were developed on a "one size fits all with alterations possible" approach to estimating telecommunications system costs. In the Federal Communications Commission's (Commission's) Proxy Model Workshops, sponsors said that the key to using models successfully for high cost areas would be to make alterations in the inputs of the models, and they said their next versions of their models, which are BCPM and Hatfield 3, will allow those alterations.

RUS is examining the models' assumptions, and will offer detailed comment on those in its Reply Comments.

One assumption which may invalidate models for some projects is the \$10,000 outside plant loop cost cap found in the BCPM. Most RUS borrower LECs have some loops that exceed \$10,000, but RUS has found only a few systems that are cheaper to serve using wireless loop plant. There are several reasons for this. First, terrestrial wireless system costs are also affected by density. Often the most expensive loops are so far apart that multiple wireless systems would be required with few subscribers on each, making them economically impractical. Second, some areas are made impractical by signal blocking geography. Third, many systems have too few expensive loops to make a single system viable. For the most rural areas, the \$10,000 outside plant loop cost cap just distorts the cost of serving subscribers and will cause underestimation of the cost of supporting universal service.

Also, if support level is based on an assumption of wireless technologies, perhaps the Commission needs to offer spectrum to the ETC at an affordable cost.

6. The best of computer models may not work for all rural areas.

RUS experience with these models so far indicates that they consistently and substantially understate the cost to build the most rural of telecommunications systems. At this time the models are being analyzed and the run results are being studied and the results will be presented in RUS Reply Comments. In general, for nine projects studied in Texas, the plant cost per subscriber calculated by the BCPM is less than one-half the amount RUS knows it would cost to build a new telecommunications system in those areas from scratch (a "greenfield" system). One other observation that can be made is that the BCPM estimates lower construction costs for some of the most expensive areas to serve than it estimates for less expensive areas. The rural areas diverge in character as much from each

other as they do from suburban and urban areas. It may be impossible to capture these divergences in a reasonable model. ETCs with densities below some threshold, perhaps 25 subscribers per route mile of plant, and those exhibiting exceptional characteristics, should be allowed an alternative to a one size fits all cost model.

If such a safety valve is made available, models could focus on the areas where they can work, and could become more straightforward to use and evaluate.

7. BCM2 performance vs. RUS experience suggests that “greenfield” systems are more expensive than embedded costs of existing systems.

RUS has compared BCM2 projected costs to build core service plant with RUS projected cost to build core service plant for loans made within the last two years. RUS then plotted those ratios against the rate of increase of total telephone plant in service (TPIS) for each loan. The comparison involved data on 99 loans. In those loans, rural LECs increased their TPIS from 22% to 220%. Loans on the low end of that range were generally for minor modifications of outside plant or central office equipment, while loans on the high end represent major rebuilds of those categories of equipment.

RUS found that the more new plant that is incorporated into a LEC at one time, the more the BCM2 undershot the RUS estimated cost.

The attached graph shows the relationship. The correlation of BCM2 TPIS to RUS estimated TPIS is very high (85-90%) for those projects which added less than 30% to their systems. The correlation slopes downward and for projects with over 100% increase in TPIS it is in the 40-50% range.

Since the BCM2 cost estimate is indifferent to when the plant is built, it represents a fixed reference number for the projects shown in the graph. This suggests that rural plant upgraded to provide core services using existing plant is actually less expensive than a greenfield build of plant to serve the same area.

This also shows that the models work better for areas that need little upgrade to meet core service requirements than areas that need a lot of investment to meet core service requirements.

RUS will research this further and report in the Reply Comments on this finding.

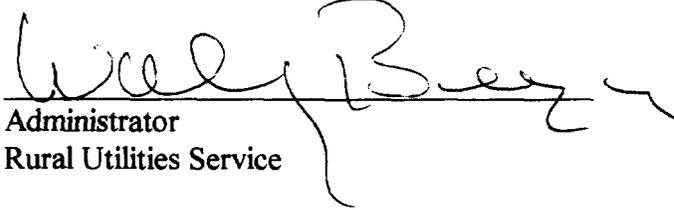
Conclusion

The current computer cost models are sophisticated, refined, versatile devices which consistently underestimate the cost of serving rural America. RUS is running the models and comparing them to RUS estimates of efficient system cost in all cases permitted by the models, and will report its results in the Reply Comments.

Other mechanisms need to be incorporated into the models, or the universal service support system. These include requiring the rural investment of universal service support and restructuring models to recognize ETCs' fixed costs.

Dated:

2/13/97



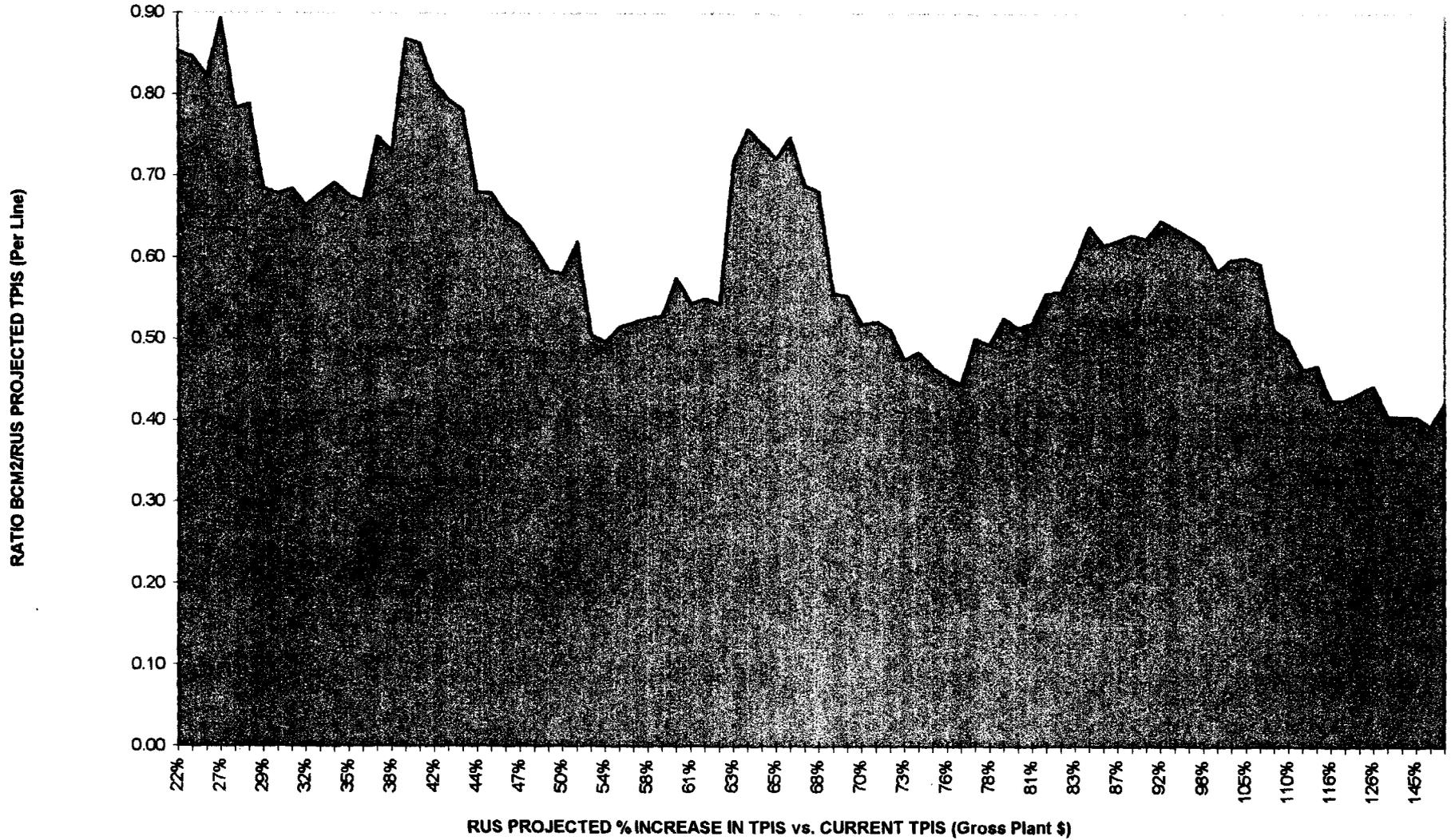
Administrator
Rural Utilities Service

TOTAL PLANT IN SERVICE

(Per Line)

BCM2 ESTIMATES vs RUS CURRENT PROJECT COSTS

(Rolling 10 Project Averages, 99 Total Projects)



RECEIVED

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION **FEB 18 1997**
WASHINGTON, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
The Use of Computer Models for) CCB/CPD Docket No. 97-2
Estimating Forward-Looking Economic)
Costs - A Staff Analysis)

TO: The Commission

**COMMENTS OF
SOUTHWESTERN BELL TELEPHONE COMPANY**

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February 18, 1997

SUMMARY*

Using a forward-looking cost proxy would be analogous to using a forward-looking budget proxy in setting the Commission's budget. To wit, inasmuch as the need for regulation will diminish as competition increases, that budget should be set based on a minimal need for regulation notwithstanding current policies and realities. Such budgeting would also create the proper incentives to evolve the Commission's structure to where it will ultimately be. Just as such budgeting would be inappropriate for the Commission, so it would be inappropriate to use forward-looking cost proxies for carriers.

Forward-looking costs are appropriate for determining a price floor, but markets should be permitted to set prices. The existing Commission cost processes use actual costs, and have been subjected to development, use, validation, examination, and refinement over an extended period of time. The cost proxy models are largely lab creations of their authors, and contain many network assumptions that are neither reasonable nor realistic in light of existing network designs and experience. The real world precludes building any of the models' forward-looking networks, and it is unreasonable to use the unattainable to calculate costs and prices.

Incumbent LECs are constitutionally entitled to a reasonable opportunity both to recover their prudently incurred investment and expenses, and to earn a reasonable return. In fact, the *Economic Report of the President* issued in February, 1997, recognized the need to meet these requirements. Regardless of statements to the contrary, the Commission has not used or seriously

* The abbreviations used in this Summary are as defined in the main text.

considered using actual costs in any Competition Trilogy docket. In each the use of forward-looking costing has been exclusively adopted or is being proposed. This proceeding should be expanded to encompass the consideration of actual cost analysis. At a minimum, embedded costs must be used to judge the reasonableness of any cost model results.

A proxy model must be able to measure the full and actual costs associated with providing the service or element in question. None of the models has actually been used to build a network, or been subjected to an extended period of trial, use, examination, and refinement. Given the number of assumptions made in the models and the admission that the model's networks are not representative of existing networks, the results of the models have limited validity. When the results of a model differ substantially from actual, observable data, the model should be rejected as invalid on its face.

Cost models should be designed to reflect actual costs, and answer the question for which the model was created. One model cannot do it all, especially in developing universal service costs. The use of one model also would not acknowledge the fact that the States have different regulatory policies that must be accommodated. Cost models should not be used to determine prices of network elements or services. The more conclusory and global an approach a model takes, the greater degree of error that is introduced throughout the model. While on a global basis those errors may cancel themselves out, those errors will lead to inaccurate results if the model is used for individual services or elements.

The currently proposed models are riddled with fictitious assumptions, or assumptions which have been so modified that they no longer reflect experience. Although SWBT cites some

of the problems, the new versions of the proposed models have only been subjected to limited analysis given that each was only recently released. Existing LEC wire centers should be used in any model, but Staff's assumption that a switch will not be located at every wire center should be rejected as inconsistent with actual experience. Wire centers should be used as the geographic unit of analysis in order to test the results against actual data, and due to the clear inaccuracies of CBGs. The models' assumptions regarding the number of business lines per CBG are based upon questionable assumptions and outright guesses.

The use of existing demand levels and "ideal" fill factors and cable sizes is fundamentally wrong and inaccurate. At a minimum, the average fill factor must be used. Actual experience also demonstrates that assuming total sharing of infrastructure (e.g., trenches, conduits) is wholly unrealistic; even AT&T's own practices do not support that assumption.

The use of economic investment lives should determine depreciation in any cost model. However, LEC financial depreciation rates are not entirely consistent with a forward-looking approach given that those rates are used for embedded, partially-depreciated plant. The use of past determinations on LEC return on equity would be inappropriate as LECs are subject to greater risks; the use of past equity/debt ratios are also inappropriate as forward-looking capital structures will contain much more equity.

The use of the lowest observed cost for each cost category is inappropriate, and ignores expense tradeoffs that can occur (higher costs incurred in one category offset by lower costs in another).

The record from this proceeding should be associated with the record in each of the
Competitive Trilogy dockets.

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